

28 06. 2005

Claims

(68)

1. Device (1) for encapsulating with encapsulating material (17) an electronic component (5), in particular a semiconductor, fixed on a carrier (4), comprising:
 - 5 - two co-acting mould parts (2, 3) which are displaceable relative to each other between an encapsulating position, in which the mould parts (2, 3), when closing onto the carrier (4), occupy a position for defining at least one mould cavity (12), and an opened position in which the mould parts (2, 3) are situated at a greater distance from each other than in the encapsulating position, and
 - 10 - feed means, for encapsulating material (17) connecting onto at least one projecting edge (11) under which is located a receiving space for a part of the carrier (4),
characterized in that
the projecting edge (11) forms a stationary assembly with one of the mould parts (2),
15 which mould part (2) also receives a support (9) for the carrier (4) that is displaceable relative to the edge (11) such that the carrier (4) can be urged against the projecting edge (11) with a controllable force.
2. Device (1) as claimed in claim 1, **characterized in that** the projecting edge (11) is defined by a material strip (10, 21).
3. Device (1) as claimed in claim 2, **characterized in that** the material strip (10, 21) is assembled releasably with a mould part (2).
- 25 4. Device (1) as claimed in any of the foregoing claims, **characterized in that** the displaceable support (9) forms a side of the receiving space for a part of the carrier (4).
5. Device (1) as claimed in any of the foregoing claims, **characterized in that** the device (1) is provided with release means (13, 14) for displacing the carrier (4) in the direction of the displaceable support (9).
- 30 6. Device (1) as claimed in any of the foregoing claims, **characterized in that** the release means (13, 14) are formed by at least one pressure element (13) arranged in the second mould part (3) for displacement under bias.

7. Device (1) as claimed in claim 6, characterized in that the pressure element (13) is connected to a control member (15) which, in the situation of mould parts (2, 3) being closed together, urges the pressure element (13) into a position where the pressure element (13) lies clear of the carrier (4).

8. Method for encapsulating with encapsulating material (17) an electronic component (5), in particular a semiconductor, fixed on a carrier (4), comprising the processing steps of:

- placing the carrier (4) on a first mould part (2) such that at least one projecting edge (11) connected to the first mould part (2) lies on the side opposite the side of the carrier (4) supporting on the first mould part (2),
- reducing the distance between the projecting edge (11) and a support part (9) of the first mould part (2) supporting the carrier (4) such that a part of the carrier (4) is clamped between the part of the first mould part (2) supporting the carrier (4) and the projecting edge (11),
- closing a second mould part (3) onto the first mould part (2) such that at least one mould cavity (12) is formed closing onto the carrier (4), and
- feeding liquid encapsulating material (17) to the mould cavity (12), characterised in that during step B) the support part is moved in the first mould part (2) towards the projecting edge (11) that is kept stationary.

9. Method as claimed in claim 8, characterized in that the carrier (4) is rotated relative to the projecting edge (11).

10. Method as claimed in claim 8 or 9, characterized in that the first and second mould parts (2, 3) are moved apart and the carrier (4) with the encapsulation (18) arranged thereon and the remaining part of the cured encapsulating material (17) are then removed from the first mould part (2) in the situation where they are separated from each other.

11. Method as claimed in any of the claims 8-10, characterized in that after closing a second mould part (3) onto the first mould part (2) as according to processing

step C), the mould parts (2, 3) are moved apart a distance of 1 to 50 µm, whereafter the distance between the projecting edge (11) and the support part (9) of the first mould part (2) supporting the carrier (4) is reduced such that a part of the carrier (4) is clamped with a controllable force between the support part (9) of the first mould part (2) and the 5 projecting edge (11).